Transit-Oriented Development Guide

A Resource Manual for Designing Good Urbanism

"We're excited to be influencing the growth happening here in Central Texas and we're pleased to be contributing to the vibrancy of our community."

Linda Watson, Capital Metro's President/CEO

"Austin needs more mobility choices to encourage those that will to get out of their cars. We need better transit, bike and pedestrian options."

Steve Adler, Austin Mayor

"Mobility is about access to opportunities and Austinites of every age and ability need safe, reliable options to get where they need to go."

Ann Kitchen, Austin City Council, District 5

"We need more 'live here, work here' multi-use development resulting in less vehicular traffic, a greater sense of community, and parks/ped-friendly facilities."

Participant, Imagine Austin Community Forum #1

"Year after year we see one theme that continues to resonate. Our growing communities and worsening traffic congestion in Texas are, in fact, very real, and they call for a variety of solutions."

Marc Williams, TxDOT Deputy Executive Director

"I want to protect people that have been born and raised here.... Everybody is feeling the pangs of affordability. One of the great things about Austin is its diversity and all kinds of people. We can't just be a city of wealthy folks, we have to be a mix."

Delia Garza, Austin City Council, District 2

TRANSIT-ORIENTED DEVELOPMENT

PURPOSE

This document is a collection of best practices for creating transit-oriented developments (TOD) with bus and rail integration. As the Austin region continues to grow, there will be an increased demand for additional transit connections with pedestrian-friendly street design. Development plays a key role in making transit a success and, the more transit is considered in the design of a project early on, the more the development will benefit from its proximity to and integration with transit.

TRANSIT-ORIENTED DEVELOPMENT

Transit-oriented development is a "type of community development that includes a mixture of housing, office, retail and/or other commercial development and amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation" (Reconnecting America). TOD features vibrant streetscapes, pedestrian-oriented built forms, and land use characteristics that make it convenient and safe to walk, cycle, and use public transit.

TOD is not a building or a project; it's a pattern of development:

• Compact, relatively dense development.

• Walking or biking distance from transit.

• Safe, walkable, interconnected & lively.

• A mix of uses - housing, jobs, services, shopping, entertainment, & education.

• Strive for 24/7 land use mix.

Components of TOD (source: ITDP)

Rendering of Market Common-Clarendon in the Rosslyn-Ballston Corridor (source: ARLnow)

BENEFITS OF TOD

TOD seeks to foster greater density than the community average with a mix of uses, quality pedestrian environment, a defined center, and affordability. There are many social, economic, and environmental benefits associated with developing TOD. Some of these benefits include:

• Reduced household driving and thus lowered regional congestion, air pollution and greenhouse gas emissions.

• Walkable communities that accommodate more healthy and active lifestyles.

• Increased transit ridership and fare revenue.

• Potential for added value created through increased and/or sustained property values where transit investments have occurred.

• Improved access to jobs and economic opportunity for low-income people and working families.

• Expanded mobility choices that reduce dependence on the automobile, reduce transportation costs and free up household income for other purposes.

Source: Reconnecting America

The Centers for Disease Control and Prevention (CDC) recognize the health benefits of TODs. In April 2010, it published "CDC Recommendations for Improving Health through Transportation Policy." Listed among its recommendations were expanding public transportation and "work[ing] with government and nongovernment organizations to develop and implement model transportation planning policies that encourage transit-oriented developments and other mixed-use development, and increase connectivity among neighborhoods and communities for all transportation modes." Additionally, the CDC encourages healthy community design "which incorporates elements (such as transportation networks, street designs, and zoning/land use policies) that work synergistically to promote health and safety."

For more information, see: www.cdc.gov/transportation/ and www.cdc.gov/ obesity/downloads/Urban DesignPolicies.pdf

APTA GUIDANCE

The American Public Transportation Association (APTA) developed standards, guidelines, and best practices to articulate the value in the planning and design of transit facilities, and the streets and neighborhoods connected to those facilities, in order to create "transit-oriented" communities. These are places in which:

• Transit services contribute to making a "place," are attractive and functional, and serve as community destinations.

• Access to transit balances the needs of all modes and users to support and encourage pedestrian, bicycle, and transit trips.

• The neighborhoods around transit facilities support and encourage a vital mix of activities through existing and new development.

• Transit corridors take advantage of the variety of nearby neighborhoods and destinations to encourage a diversity of places and access modes.

• The transit network connects users to key regional destinations and supports the economics health of the region and its communities.

DEMOGRAPHIC AND DEVELOPMENT TRENDS

Changing demographic patterns, market demand, and public taste support the development of walkable, mixed-use communities with transit access. As stated by the National Transit Institute:

• Singles will soon be the new majority.

• Older people will outnumber young people by mid-century.

• Generation X and Y value sustainability and community living.

• Growth in foreign-born population.

• Americans want more housing and transportation choices and are looking for convenience and affordability.

• May 2009 - transit ridership reached 10.3 billion trips.

• Some regions (e.g., Denver) are choosing to tax themselves to build transit, rather than wait for federal funding.

• Market demand for housing near transit, including employment patterns and location, as well as State and Local government incentive programs and land use subsidies.

Source: National Transit Institute, Transit-Oriented Development Participant Workbook, 2013

The 2015 Community Preference Survey conducted by the National Association of Realtors found that:

• When choosing a new home, respondents want transportation choices. 85% said that sidewalks were important and 79% said that being within an easy walk of places was important.

• Compared to other generations, Millennials placed more importance on walkable communities, providing convenient alternatives to driving, expanding public transportation, having transit close by, and developing communities where more people do not have to drive long distances.

• Many people want to live in a more walkable neighborhood than they do now. Overall, 25% currently live in a detached, single-family home, but would prefer to live in an attached home in a neighborhood where they could walk to places & have a shorter commute.

• People who currently live in neighborhoods with lots of places to walk to nearby are more satisfied with the quality of life in their community.

Riders boarding MetroRail at Crestview Station.
(source: Capital Metro)

AND WHEN MILLENIALS AREN'T WALKING...

Millenials use public transportation more than any other generation (40%, compared to 28% for Gen-X, 19% for Baby Boomers, and 8% for the Silent Generation). When asked about government trasportation spending priorities, millenials showed more preference than other generations for:

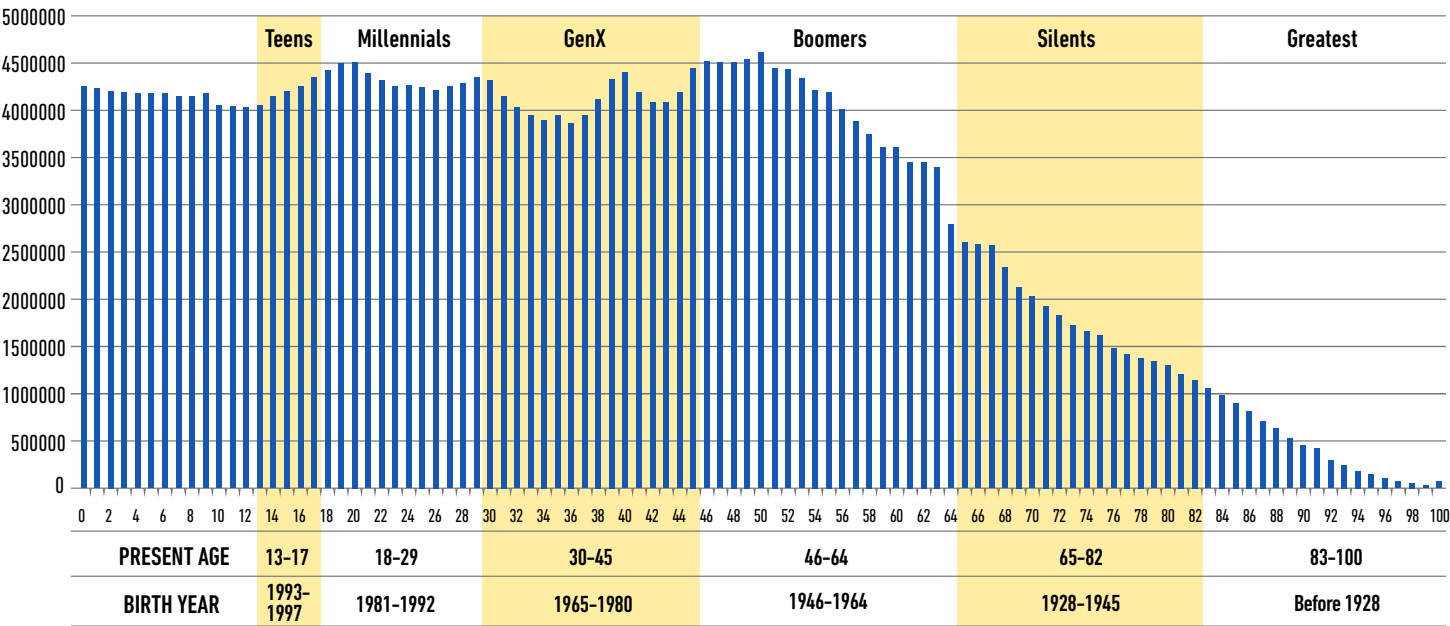**59%** Expanding public transportation, including trains and buses

58% Providing convenient alternatives to driving such as walking, biking, and public transportation

53% Developing communities where more people do not have to drive long distances to work or shop

49% Building more sidewalks

Soure: National Association of Realtors

GENERATIONS DEFINED BY AGE IN 2010

	Teens	Millennials	GenX	Boomers	Silents	Greatest
PRESENT AGE	13–17	18–29	30–45	46–64	65–82	83–100
BIRTH YEAR	1993–1997	1981–1992	1965–1980	1946–1964	1928–1945	Before 1928

SOURCE: Brand Amplitude, LLC based on data from US Census (Projected Population by Single Year of Age, released 2008 based on 2000 data). Age categories based on Pew research.

DIVERSITY IN DESIGN & PLACEMAKING

DIVERSITY IN DESIGN

All TODs are not the same. Some are primarily residential, some are primarily commercial, some are urban in nature and some are town-center oriented. In order to design a successful TOD, the following elements should be included:

• Include engaging, high-quality public spaces (e.g. small parks or plazas) as organizing features and gathering places for the neighborhood.

• Encourage a variety of housing types near transit facilities available to a wide range of ages and incomes.

• Incorporate retail and other uses into the development if viable, ideally drawing customers both from the TOD and adjacent streets.

• Ensure compatibility and connectivity with surrounding neighborhoods, in addition to a pedestrian-oriented environment.

• Create TOD plans that are flexible so they can respond to changing conditions.

• Strive to make TODs realistic yet economically viable from a diversity of perspectives (city, transit agency, developer, resident, employer).

• Recognize that all TODs are not the same; each development is located within its own unique context and serves a specific purpose in the larger context.

Note: Of course not all TODs will accomplish all of these goals; the best TODs include most of these components.
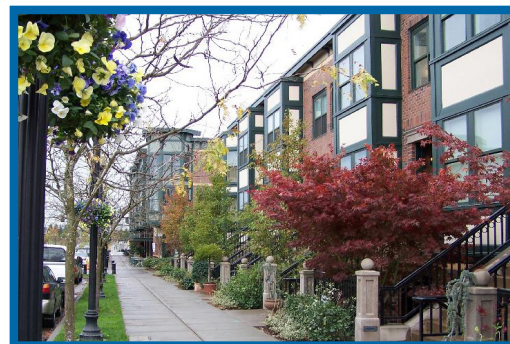
Orenco Station outside of Portland, Oregon is a 260 acre TOD with housing choices ranging from 5-story condos, 3-story apartments, and single-family homes. Orenco Station is a great example of how to create a TOD in a suburban context.
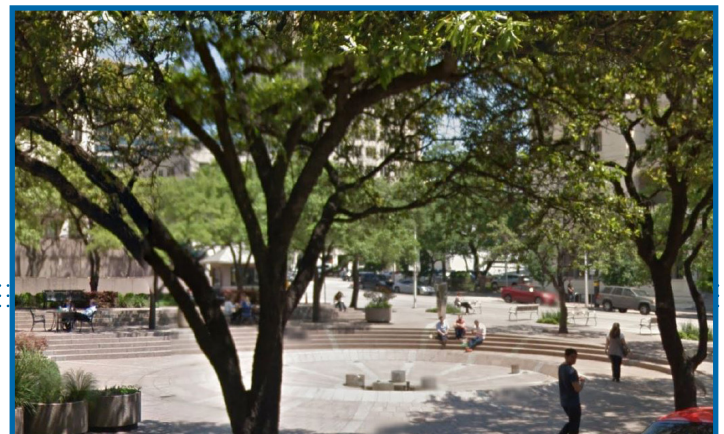
PLACEMAKING

Placemaking is an important element of TOD. Founded on principles advanced by revolutionary figures in urban planning, such as Jane Jacobs and William H. Whyte, it centers on the premise that cities should be designed for people and not just cars or shopping centers and should create inviting public spaces. As defined by Project for Public Spaces, "Placemaking refers to a collaborative process by which we can shape our public realm in order to maximize shared value. More than just promoting better urban design, an effective Placemaking process capitalizes on a local community's assets, inspiration, and potential, and it results in the creation of quality public spaces that contribute to people's health, happiness, and well-being. " For more information on Placemaking, see: www.pps.org/reference/what_is_placemaking.

One concept connected to Placemaking is the idea of "third places." Coined by American urban sociologist, Ray Oldenburg, "third places" are "anchors of community life that facilitate and foster broader, more creative interaction. They are places where those that congregate there have little to no obligation to be there, put no importance on an individual's status in a society, focus on playful and happy conversation, are open and readily accessible, harbor a number of regulars, are welcoming and relaxed, and are a home away from home" (Myers, p. 37, 2012).

The following environments can be considered possible third places: "community centers, senior centers, coffee shops and cafes, bars and pubs, markets, recreation centers, schools, libraries, parks, movie theaters, churches, shopping centers, and neighborhood block parties" (Jeffres et al., 2009). According to Ganguly and Bhattachrya (p. 217, 2013), Oldenburg suggests that the following elements characterize a true third place:

• Free or inexpensive.

• Food and drink, while not essential, are important.

• Highly accessible: proximate for many (walking distance).

• Involve regulars- those who habitually congregate there.

• Welcoming and comfortable.

• Both new friends and old should be found there.

Plaza at 5th & Colorado St.
Austin, TX (source: Capital Metro)

WHAT MAKES A GREAT PLACE?

PROJECT FOR PUBLIC SPACES

KEY ATTRIBUTES

INTANGIBLES

MEASUREMENTS

PLACE

SOCIABILITY

Key attributes: DIVERSE, STEWARDSHIP, COOPERATIVE, NEIGHBORLY, PRIDE, FRIENDLY, INTERACTIVE, WELCOMING

Measurements: NUMBER OF WOMEN, CHILDREN & ELDERLY, SOCIAL NETWORKS, VOLUNTEERISM, EVENING USE, STREET LIFE

USES & ACTIVITIES

Key attributes: FUN, ACTIVE, VITAL, SPECIAL, REAL, USEFUL, INDIGENOUS, CELEBRATORY, SUSTAINABLE

Measurements: LOCAL BUSINESS OWNERSHIP, LAND-USE PATTERNS, PROPERTY VALUES, RENT LEVELS, RETAIL SALES

ACCESS & LINKAGES

Key attributes: CONTINUITY, PROXIMITY, CONNECTED, READABLE, WALKABLE, CONVENIENT, ACCESSIBLE

Measurements: TRAFFIC DATA, MODE SPLITS, TRANSIT USAGE, PEDESTRIAN ACTIVITY, PARKING USAGE PATTERNS

COMFORT & IMAGE

Key attributes: SAFE, CLEAN, "GREEN", WALKABLE, SITTABLE, SPIRITUAL, CHARMING, ATTRACTIVE, HISTORIC

Measurements: CRIME STATISTICS, SANITATION RATING, BUILDING CONDITIONS, ENVIRONMENTAL DATA

IMPLEMENTING TOD

CHALLENGES

There are many challenges to successfully implementing TOD. Nationwide, most TOD projects fall short of providing the full range of potential benefits. In *The New Transit Town*, authors Hank Dittmar and Gloria Ohland of Reconnecting America state the following:

> Projects that clearly could take advantage of being adjacent to transit to reduce parking still use standard parking ratios, indicating an underlying assumption that these projects will be auto-oriented. Projects that contain a variety of uses still lack an "appropriate" mix-that is, the specific uses have not been selected to create an internal synergism but have only responded to more general market conditions. Residential projects rarely include units targeted at a mix of income groups or household sizes, but are focused on one particular market segment...Many projects are relatively unambitious in what they hope to accomplish, or overly narrow in their view of the potential impacts of TOD.

Challenges include:

• There is no clear definition of TOD or agreement on desired outcomes, and hence no way of ensuring that a project delivers these outcomes.

• There are no standards or systems to help the actors involved in the development process bring successful transit-oriented projects into existence.

• TOD requires the participation of many actors and occurs in a fragmented regulatory environment, adding complexity, time, uncertainty, risk, and cost to projects.

• Although transit adds accessibility and value to a place, transit alone is insufficient to drive real estate markets. When other forces are not present, special actions are needed to ensure that projects which achieve regional land use or housing continue to progress.

• Local land use plans and zoning ordinances focus on separating uses and requiring on-site mitigation of potential impacts, rather than integrating uses and infrastructure.

• Neighborhood opposition to increased density (NIMBY-not in my backyard).

• Lender skepticism, high construction costs, development fees, etc.

Sources: Hank Dittmar and Gloria Ohland, *The New Transit Town* (2004); National Transit Institute, Transit-Oriented Development Participant Workbook (2013).

BEST PRACTICES

In order to remove the barriers to successfully implementing TOD and increase the number and quality of compact, mixed-use, mixed income developments near transit, the following supportive conditions must be encouraged:

• Defining TOD as a set of products meeting a set of performance measures.

• Standardizing and providing systematic approaches to implementation.

• Removing public policy barriers.

• Removing barriers in standards marketplace practice (e.g., creating new ways of accepting risk).

• Expanding the range of demonstration projects.

• Standardizing performance measures and publicizing evaluations of real projects against these standards.

• Broadly diffusing the resultant standards and practices.

• Getting broad alignment around support of these products and their supportive policies and practices, region by region, across the United States.

Pedestrian Mall Revitalization, Portland, Oregon
(source: ZGF Architects, LLP)
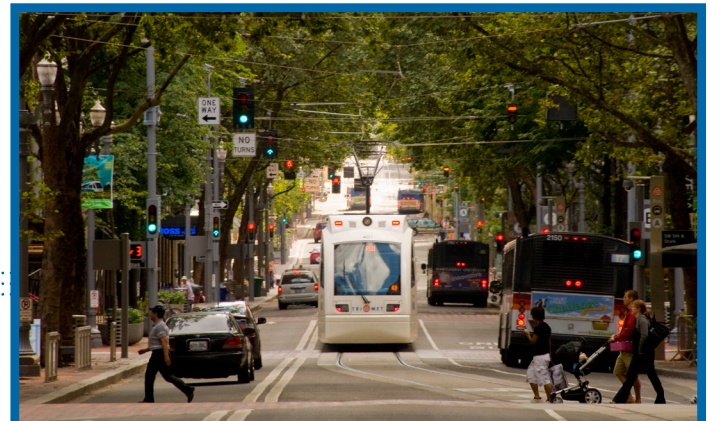
SOCIAL EQUITY & AFFORDABLE HOUSING

Affordable housing is an important component of TOD. While some prefer transit-oriented, amenity-rich neighborhoods based on lifestyle preferences, for others- particularly people with lower incomes or for whom driving is difficult or impossible-TOD offers accessibility that is crucial to reaching jobs and life's other necessities in an efficient and economic manner. TOD "presents unique opportunities to create housing in proximity to public transportation, and to address zoning, land use and financing issues that affordable housing developers typically encounter when developing mixed-income projects," in addition to reducing housing and transportation costs that make up, on average, 52 percent of Americans' annual incomes (*Better Coordination of Transportation and Housing Programs to Promote Affordable Housing Near Transit*, U.S. Department of Transportation and the Federal Transit Administration, 2008).

Unfortunately, the prevalence of single-use zoning, among other factors, has limited the number of compact, mixed-use, and multi-modal neighborhoods, thereby increasing demand and property values as a result of the scarcity of affordable housing. These price increases can lead to additional cost burdens, potential displacement and/or barriers to entry for low- and moderate-income households. If these households are displaced it can also reduce likely riders' access to transit and limit employees' and customers' access to businesses. Measures need to be put in place to guard against gentrification of low-to-moderate-income neighborhoods.

EQUITABLE TOD

One solution to these affordability challenges is Equitable TOD (eTOD):

> Which is well-planned and implemented development near transit that accounts for the needs of low and moderate-income people, largely through the preservation and creation of affordable housing. eTOD can expand mobility options, lower commuting expenses and enhance access to employment, child care, schools, stores and critical services. This development model also conveys ancillary benefits to the broader community, the economy, the environment and the transportation system. *Source: Promoting Opportunity through Equitable Transit-Oriented Development (eTOD): Making the Case' by Hersey et al, 2015.*

MISSING MIDDLE

In Austin, as is the case in many other American cities, one challenge to affordable housing is the lack of "missing middle" housing. "It refers to a range of housing product types that, in density and intensity, lie between the traditional owner-occupied single-family detached home and the multiple-unit apartment complexes and buildings regulated (in Austin and elsewhere) as "multifamily" commercial properties." Building

Evans Station Lofts, Medici Communities, LLC
(source: Urban Land Conservancy)
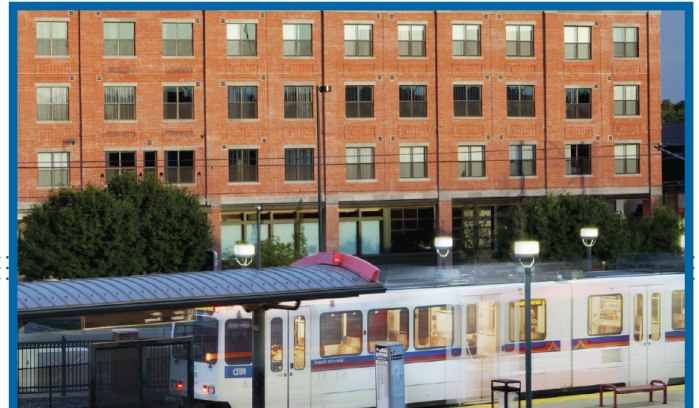
types identified as "missing middle" housing include accessory dwelling units (ADUs), townhomes, lofts, duplexes, fourplexes, condominiums, and microunits. Such housing that falls "in the middle" between pure single-family and more typical multi-family housing "can provide high-quality, marketable and attainable options between single-family homes and mid-rise apartments for walkable urban living" for low-to-

moderate income residents. For more information on "missing middle" housing and recommendations for the creation and preservation of such housing in Austin, see austin.uli.org/wp-content/uploads/sites/10/2015/05/AustinTAP-MM-FINAL.compressed.pdf.

Source: *The Missing Middle: Affordable Housing for Middle Income Families in the City of Austin* by the Urban Land Institute, 2015.

"Missing Middle" Housing Types. (source: Opticos Design, Inc.)

MissingMiddleHousing.com is powered by Opticos Design.
Illustration © 2015 Opticos Design, Inc.

"Missing Middle" Housing Densities (du/ac=dwelling units/acre)

SUPPORT FOR AFFORDABLE HOUSING

There are a number of tools to achieve deeper affordability, including the preservation of existing market rate housing, income-restricted affordable housing, regulations or incentives (i.e. entitlements for increased density), and subsidies. Programs and techniques to support the preservation or creation of reasonably-priced housing near public transit, include the following:

• Permanently Affordable Housing Models (e.g., Limited-Equity Cooperatives (LECs), Community Land Trusts (CLTs), Deed-Restricted Housing (DRH), Shared Appreciation Loans (SALs).

• Local and Regional TOD Funds.

• Land Banks, Housing Trust Funds (HTFs), Inclusionary Zoning, Impact Fees, and Community Benefit Agreements (CBAs).

• Federal Funding Sources (e.g., Planning and Local Technical Assistance Programs, Pilot Program for TOD Planning, National Public Transportation/TOD Technical Assistance Initiative, Choice Neighborhoods Planning and Implementation Grants, CDBG Program, Building blocks for Sustainable Communities.

Source: Creating & Preserving Reasonably-Priced Housing near Public Transportation, National Community Land Trust Network

HOUSING & TRANSPORTATION AFFORDABILITY INDEX

Housing is considered affordable when it costs less than 30% of the household budget. The Housing + Transportation Affordability Index suggests that a more complete measure of affordability is that combined housing and transportation costs less than 45% of the household budget. When the combined cost of housing and transportation are considered, housing located away from the workplace, retail areas, and urban centers becomes more costly.

HOUSING & TRANSPORTATION COST COMPARISON

Legend:
- HOUSING COSTS AS % OF INCOME
- HOUSING & TRANSPORTATION COSTS AS % OF INCOME
- HOUSING IS LESS THAN 30% OF HOUSEHOLD INCOME
- HOUSING & TRANSPORTATION COMBINED ARE LESS THAN 45% OF HOUSEHOLD INCOME
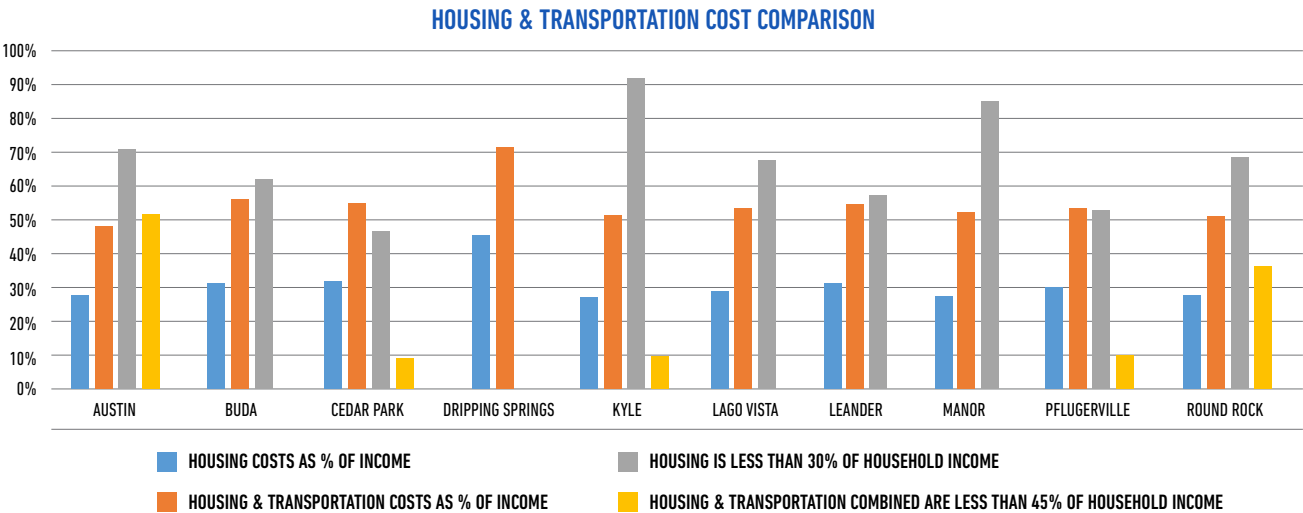
FINANCING TOD

Financing complex mixed-use TOD projects is easier than it once was and "many more investors in both debt and equity understand mixed-use, live-work, and ground floor retail and are willing to provide capital, including long-term debt. Loan officers across the nation are willing and able to do deals, as are a growing number of insurance companies, pension funds, and established real estate industry players" (Dittmar, 2004, p. 83). However, there are continuing challenges to financing these complex and less familiar projects, such as the number of entities involved, the need for TOD infrastructure and community facilities to be in place before new private development can occur, "higher land costs around transit stations, infrastructure upgrades needed to support increased density, the need to assemble small parcels of land to reach a critical mass, and the need to replace existing surface parking reservoirs with structured parking" (*Reconnecting America*, Center for Transit-Oriented Development, 2008, p. 4).

Best practices that provide creative and innovative financing strategies for TOD infrastructure include the following:

• Non-profit Community Investment or Revitalization Funds (LISC, Enterprise Foundation, and local smart growth funds).

• Direct Fees, User Fees (congestion pricing and transportation utility fees).

• Debt Tools (private debt, bond financing, and specialized debt).

• Bonds (general obligation, revenue, private acuity, and lease revenue bonds).

• Specialized Debt (GARVEE bonds, revolving loan funds, infrastructure banks, and RRIF).

• Credit Assistance (bond insurance, credit enhancements, credit lines, and loan guarantees).

• Equity Tools (Public-Private Partnership, and infrastructure investment funds).

• Value Capture Tools (developer fees and exactions, special districts, Tax-Increment Financing, Joint Development).

• Grants and Other Philanthropic Sources (CMAQ, TAP, and Section 5307 Programs; CDBG and EDA Grants; and grants provided by foundations and public charities).

• Other tools: structured funds, land banks, and redfields to greenfields.

For more information on the above financing strategies and additional ones, see: www.ctod.org/pdfs/2008MTCFinancingTOD.pdf

Fruitvale Village, Oakland, CA
(source: Eric Fredericks)

STREET DESIGN & DEVELOPMENT CHARACTER

CONNECTIVITY & THE GRID

The most important part of any TOD is the seamless connectivity of the street network. Well-connected streets offer a variety of benefits to a community, such as providing pedestrians, cyclists, transit riders, and drivers with multiple direct routes for traveling short distances. Street connections are the most important upfront infrastructure component that is very difficult to change later.

A TOD should include the following connected street-design components:

• Connected streets for pedestrian, bicycle and vehicular connectivity.

• Frequent intersections to create a pedestrian-scale block pattern.

• A dense grid-like pattern of arterial, collector, and local streets.

• ADA compliant and more inviting to foot traffic, bicycling, transit, and other travel choices.

The examples at right illustrate the contrast between a typical suburban subdivision land plan with a well-connected street network that offers a variety of safe and efficient options for vehicular, transit, pedestrian, and bicycle movement throughout the development.
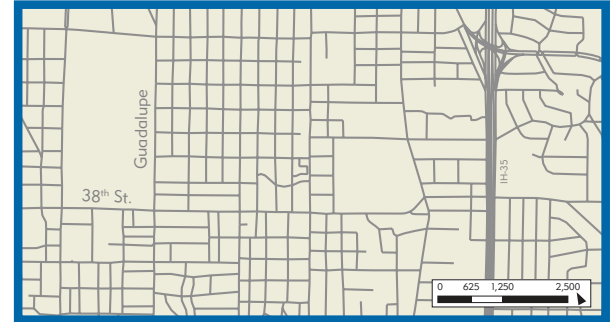
GRID CONNECTIVITY: HYDE PARK Originally built as a streetcar suburb in 1891, Hyde Park's streets were created specifically to facilitate transit use. The grid system offers extremely efficient local travel for both vehicles and pedestrians with multiple access points to the collectors and arterials.

MODERATE CONNECTIVITY: ZILKER & BARTON HEIGHTS The street design in these neighborhoods is not a grid but the street network is still very connected. This modified grid serves local vehicular traffic well and has adequate pedestrian connections; some block lengths are larger than desired largely due to terrain constraints.
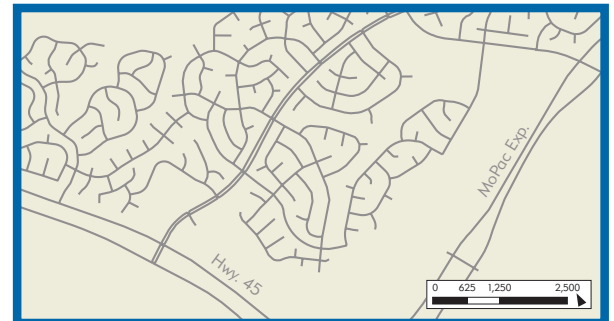
POOR CONNECTIVITY: CIRCLE C The street network is not well-connected. This type of street layout is inefficient for local neighborhood travel and creates pressure on arterial roads due to limited access points. Transit cannot be operated efficiently in this environment, nor does it promote pedestrian-oriented design or movement.

COMPLETE STREETS

An important component of street design is the concept of Complete Streets, which are streets designed and operated for all users. "Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations" (National Complete Streets Coalition). TODs work best when streets are designed at a pedestrian scale. Key components of pedestrian-scale commercial streets include:

• Fewer lanes designated for cars than conventional roads designed for cars.

• Sidewalks and crosswalks; shared space where appropriate.

• Windows facing pedestrian routes with variation in building facade design.

• Designated bicycle lanes and pedestrian-friendly intersections.

• No "free right" turning lanes.

• Street hierarchy with wider, designated travel lanes adequate for buses and bus stop designations.

FOR MORE INFORMATION ON THE BENEFITS OF COMPLETE STREETS, SEE: www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/benefits-of-complete-streets/
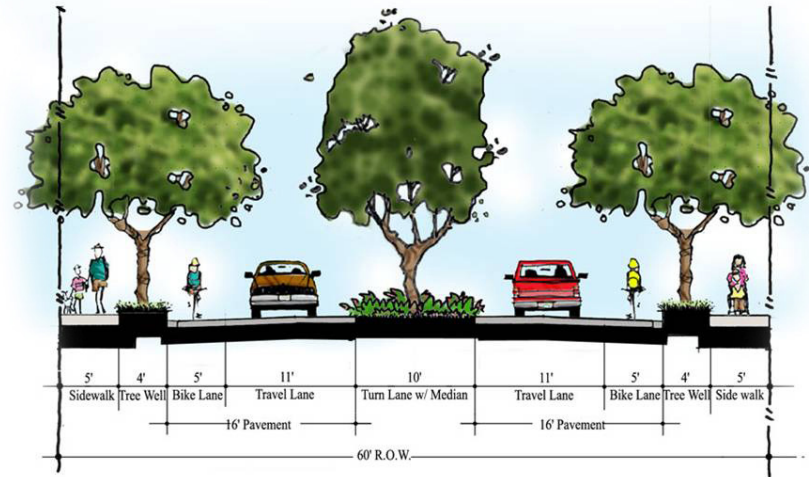
Street Section of Pedestrian Scale (source: County of Kaua'i)

Complete Streets Example, Charlotte, VA
(source: National Complete Streets Coalition)

COMMERCIAL & MIXED-USE DEVELOPMENT

Commercial and mixed-use building facades should be oriented to public activity along primary streets with build-to lines. Diverse building design is necessary to keep pedestrians engaged during their walk. Sufficient width should be allotted for sidewalk activity including restaurant sidewalk cafes and retail activity, if appropriate.

RESIDENTIAL DEVELOPMENT

Residential areas need a good sidewalk network. Setbacks should vary and both single-family and multi-family developments should include street shade and trees wherever possible. Garage entry should be set back at least 10' from the front of the dwelling. Minimize the 'snout house' effect (houses with protruding garages taking up most of the street), allowing for a parked vehicle without encroaching on sidewalks.

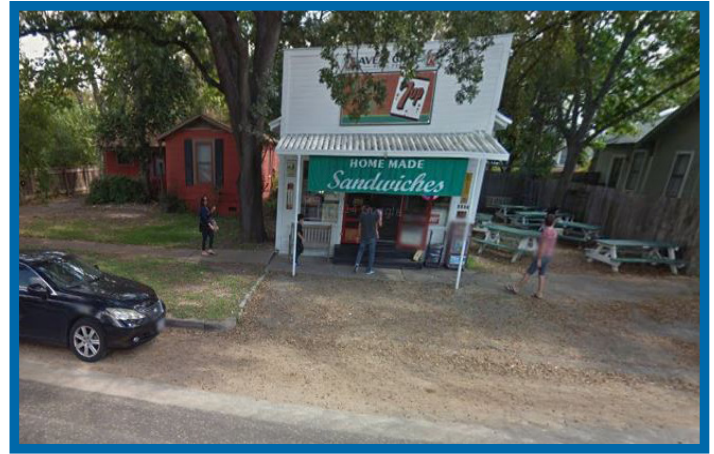Active street frontage and surrounding residential properties make this Hyde Park sandwich shop a popular destination. (source: Google Maps)

PARKING

The biggest challenge in a development is to get the parking right. Too much parking makes a development less pedestrian-friendly and wastes valuable real estate. Too little parking may impair retailers. Introduce creative parking strategies that integrate, rather than divide the site and reduce the sense of auto domination. It is important to provide adequate bicycle parking facilities in the most convenient location "within 50 feet of the platform entrance to provide additional rider options, enhance access to stop-adjacent destinations, and ensure transit accessibility and first/last mile connections. Parking should be in full view with good sightlines to pedestrian traffic, and covered by good lighting" (NACTO, 2015).

All parking should be located to maximize Placemaking and parking supply and demand should be analyzed to determine the necessity and level of parking that should be supplied. Some general "rules of thumb" for parking integration include:

MOVE IT   Community goals are best served when parking is moved away from the transit nodes within a quarter mile radius.

SHARE IT   Sharing parking among patrons who use transit at different times of the day or week is an excellent way to minimize land devoted to parking.

DECK IT   Structured parking enables pedestrian prioritization and provides revenue opportunities to offset increased cost.

WRAP IT   Wrapping a parking structure with retail, service, shops, restaurants and residences enables the street edge to host continual activity.

BUS SPECIFICATIONS

Bus stops and loading zones, while important to transit, can cause conflicts with other functions and urban forms. They can also cause conflict with rail operations, where the placement of additional crossings, particularly those that are highly restricted, may only be approved by CMTA and subject to FRA regulations. However, land devoted exclusively to bus loading can feel empty during non-peak times. The amount of land and public right-of-way space dedicated to bus operations should be used as efficiently as possible. As bus stops are public spaces, they should be context-sensitive where possible, integrated visually and functionally into the surrounding environment. Bus operation compatibility with other transit modes requires a few key elements in street design. In addition to the most fundamental of bus integration priorities (safety, security, and service) a few required components include:

• Intersection design that prioritizes pedestrian movement and access to bus stops.

• Bus turns that are accommodated at controlled intersections.

• Bus and street design that provides protection for both bus and vehicular movements from unnecessary conflict points (e.g., NO angled parking (see diagram below), 90 degree front-in parking must fully clear drive aisle, 22 foot depth recommended).

• Bus pullouts are not needed. On-street bus stops are sufficient.

Complete guidelines for street design to complement bus traffic can be obtained by meeting with Capital Metro planners. However, streets should generally be in a designated hierarchy to accommodate uses appropriately. Those streets designated for bus service should not have front-in angled parking. In addition, bus stops should be inviting environments and complement the surrounding architecture and setting.

Example of bus stop without consideration of or complementing surrounding environment.

Example that complements surrounding architecture with similar brick work (source: Geograph)
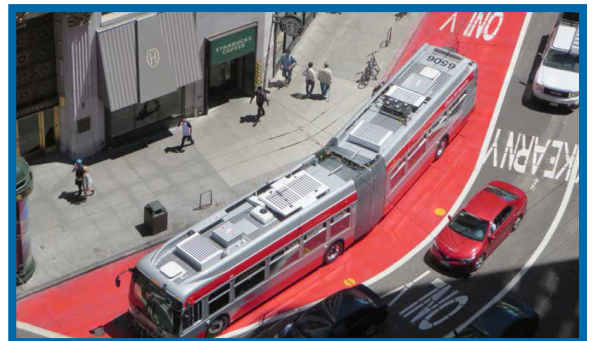
Bus-only lane for articulated buses. (source: NACTO)

DENSITY & MIXED-USE

MIXED USES, BUT NOT NECESSARILY ALL IN THE SAME PLACE

A transit corridor that offers an advantageous mix of uses can be used to integrate a number of separate activity nodes, particularly when the uses are close together, easily accessible, and support each other. Capital Metro can justify more transit service in areas designed to be transit-oriented due to the increase in ridership and foot traffic direct result of density and connectivity. In addition, more retail and services for the community will locate in areas where there are lots of people. However, though the density of buildings and people in an area is important, not all areas are well-suited for high density and maximum density should be located in the urban core. TOD projects build communities where people can meet many daily needs without having to deal with heavy car traffic and lessens automobile dependence.

TOD DISTRICTS

The City of Austin has defined four general types of TOD districts and three character zones, as described below. Other cities in the service area have similar descriptives of the TOD form.

DISTRICTS & CHARACTER ZONES

TRANSITION ZONE
The area on the periphery of the TOD district boundary, which abuts adjacent neighborhoods.

MIDWAY ZONE
The area between a gateway zone and a transition zone.

GATEWAY ZONE
The area immediately surrounding the station platform where passengers enter or exit transit vehicles; typically 300-350 feet from the edge of the station.

ADJACENT NEIGHBORHOOD

TRANSIT ROUTE

TRANSIT STATION

TRANSIT ROUTE
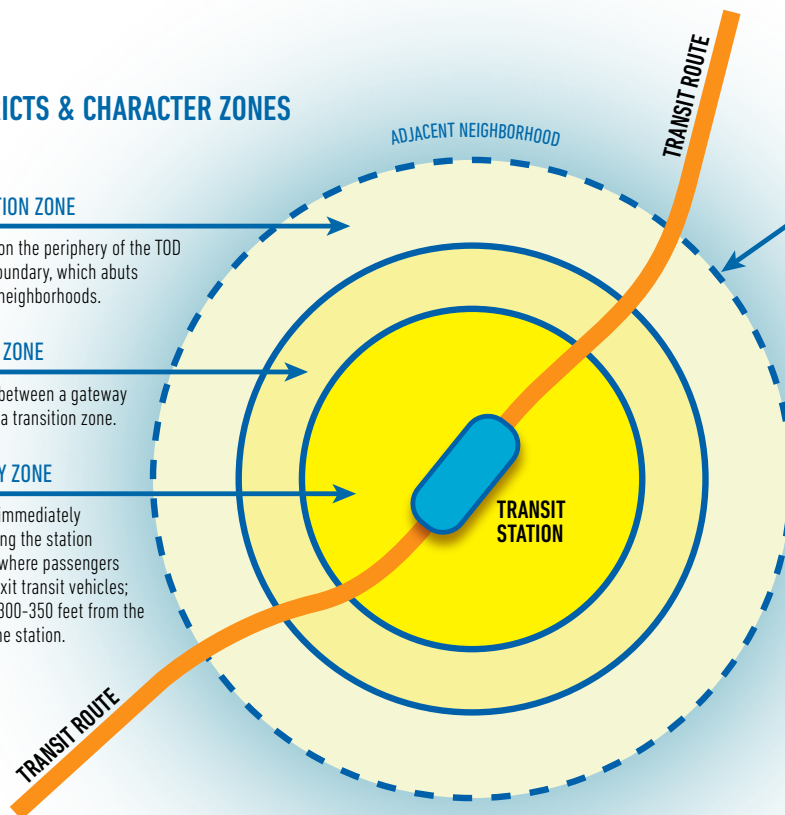
DISTRICT BOUNDARY

The district boundary defines the edges of the TOD District and which properties will be included in the development of the Station Area Plan and subsequent Regulating Plan. The City of Austin defines four different district types:

Neighborhood Center TOD
Located at the commercial center of a neighborhood, it contains the lowest density of the District Profiles.

Town Center TOD
Located at a major commercial, employment, or civic center, it contains moderate densities relative to other District Profiles.

Regional Center TOD
Located at the juncture of regional transportation lines or at a major commuter or employment center, it contains greater densities relative to other District Profiles but less that in a downtown TOD.

Downtown TOD
Located in a highly urbanized area, it supports the highest density of all District Profiles and is intended for high-rise development.

Source: City of Austin Planning & Development Review Department

DENSITY REALIZED - WHAT DO DIFFERENT DENSITY LEVELS LOOK LIKE?

The photos below illustrate different levels of local housing density that are well-integrated into an attractive neighborhood context and in direct proximity to transit.

5-20 du/ac

Chestnut Commons | East Austin
MLK, Jr. Station

Mueller | East Austin

20-40 du/ac

Bel Air Lofts | South Austin
On-street bus stop

Saltillo Lofts | East Austin
Plaza Saltillo Station

40-60 du/ac

Midtown Commons | Central Austin
Crestview Station
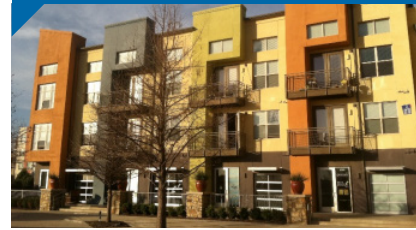
The AMLI | Central Austin
North Loop Station

BUILDING SCALE					
BUILDING PATTERN	URBAN CENTER	URBAN NEIGHBORHOOD	SUBURBAN CENTER	SUBURBAN NEIGHBORHOOD MEDIUM DENSITY	SUBURBAN NEIGHBORHOOD LOW DENSITY
BUILT ENVIRONMENT					
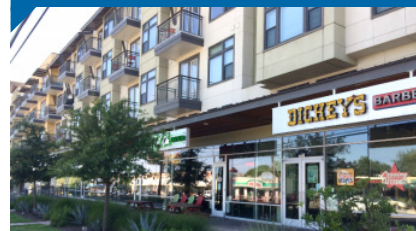
Examples of Building Pattern and Density (source: PB Placemaking)

TOD CHECKLIST FOR NEW PROJECTS

CONNECTIVITY
- ☐ Does pedestrian-oriented design come first?
- ☐ Are the streets designed to connect the development to adjacent areas?
- ☐ Is there more than one road to carry multiple modes of transportation?
- ☐ Are bicycle parking, infrastructure, and access provided with the building project?
- ☐ Are transit facilities located near the entrances to buildings and project facilities?
- ☐ Does the project seek out ways to provide short walking distances between housing, shopping, employment and transit facilities?
- ☐ Does the development provide safe direct pedestrian and bicycle connections to stations and stops from proximate development?

STREET CHARACTER
- ☐ Do the buildings face the streets, sidewalks, and public spaces, and do they conform to a built-to line?
- ☐ Has space been provided for bus stop shelters and/or benches? Are trees, street lamps, benches, planters, statues, and sculptures used to enhance the street and make it more pedestrian-friendly?
- ☐ Are there wheelchair ramps to access the street at crosswalks or mid-blocks?
- ☐ Are these stops accessible by sidewalk, bicycle, or pedestrian paths?
- ☐ Are there shaded areas for pedestrians?
- ☐ Does the development have alley-loaded design that hides less desirable elements, i.e. dumpsters, loading docks, service entrances, etc. from public view?

PARKING AND ACCESS IMPROVEMENTS
- ☐ Does the development provide preferred parking for wheelchair users, carpoolers, and service vehicles?
- ☐ If there is surface parking, is it located in the rear of buildings?
- ☐ Does the development consider the use of garage parking to avoid large surface parking lots?
- ☐ Does the project encourage shared-parking for complementary uses?
- ☐ Is bicycle parking available?
- ☐ Is parking at a minimum?

LAND USES NEAR TRANSIT FACILITIES
- ☐ Is there a mix of residential, commercial, and other compatible land uses near transit?
- ☐ Are mixed land uses at a maximum near the transit service facility?
- ☐ Are transit facilities accessible by bicycle or on-road bikeways?
- ☐ Does the development incorporate strategies for equitable mixed-use and mixed-income communities around transit?
- ☐ Are the local community's vision and values considered in project development?
- ☐ Does the development incorporate sustainability principles and Placemaking elements into project design?

ADVANCED MASS TRANSIT SERVICES AND FACILITIES
- ☐ If existing transit services are not immediately accessible to the development, could transit access be made available to the project site with the rerouting of an existing transit line?
- ☐ Are the road dimensions adequate to accommodate transit vehicles?
- ☐ Is there adequate traffic-control at intersections for buses to operate safely?
- ☐ Does the bus stop layout environment meet Capital Metro standards?
- ☐ Will the development increase transit ridership?

COMMUNITY DEVELOPMENT PUBLIC AND PRIVATE PARTNERSHIPS
- ☐ Did the project development process involve Capital Metro staff at the early design stages?
- ☐ Are there opportunities for partnerships and additional funding?

METRORAIL STATIONS: 2030 TRANSIT PLAN

DOWNTOWN STATION is between the Austin Convention Center, Brush Square, and the Downtown Austin Hilton Hotel, providing direct access to the central business district and Austin's well-known entertainment districts. Plans are already in place to build a permanent MetroRail station and construction begins as early as 2017. Improvements will replace the current platform and include the development of a pedestrian plaza and three sets of rail to accommodate anticipated increases in pedestrian frequency.

Downtown Station

PLAZA SALTILLO STATION is a city-owned park facility located just east of I-35 that is experiencing revitalization as a result of the Red Line. This station is situated among a diverse, culturally rich area with an eclectic mix of small businesses, artists, and new enterprises. Ten acres of land immediately west of the station is slated for redevelopment, with plans including office space, apartments, restaurants, and retail. The residential component will include 15% for affordable housing, 1/2 reserved for seniors. Other development projects around the station include live/work condominium units and street level commercial space at "Fourth &;" Eastside Station apartments, and the Arnold, with proposed office and apartment space.
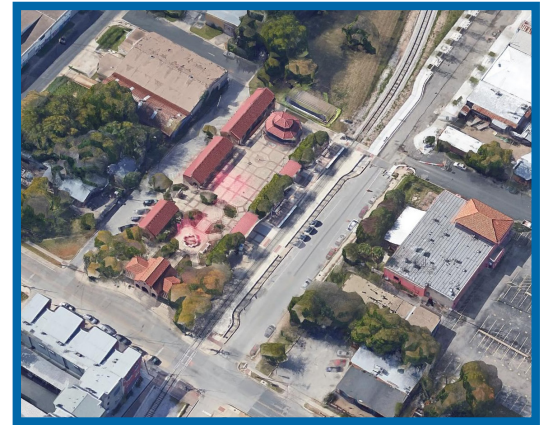
Plaza Station Station

MLK, JR. STATION is located near non-profits Creative Action and PeopleFund in the historic Chestnut neighborhood. M Station Apartments and Chestnut Commons provide affordable housing in close proximity to the station. This station is the main stop serving the University of Texas and the State Capitol complex. A mixed-use/multifamily community and Retirement Village are under construction and a mixed-use creative office development is planned near the station. Connection to the Upper Boggy Creek Trail is slated for 2016.

MLK, Jr. Station

HIGHLAND STATION is located across the street from ACC, several employers, and an area planned for redevelopment that will include the Phase 2 expansion of the ACC Highland campus. A new mixed-use apartment complex adjacent to ACC is planned. The area also includes the Crestview/Highland Trail, providing residents with multi-modal connectivity and recreational options.

Highland Station

CRESTVIEW STATION is already off and running in the heart of Central Austin as the Red Line's first TOD. Midtown Commons is a mixed-use development that offers apartments, live/work space, office space and retail space, including the Black Star Co-op Pub & Brewery. Phase 3 and 4 of the Midtown Commons expansion are planned for the near future.

Crestview Station

KRAMER STATION is in the epicenter of one of Austin's fastest growing corridors, offering access to major tech employers and upscale shopping at the Domain. Zoning improvements in the North Burnet Gateway will foster TOD in the decade to come. The area is part of the North Burnet/Gateway plan, which encourages TOD investment around the station.

Kramer Station

HOWARD STATION is next to the Loop 1 toll road, situated in an area that is transforming from ranchland to a growing residential and retail community. Parking at the station is being expanded by 75 spaces and will also include 100 leased parking spaces nearby on the east side of the Loop 1 Toll.
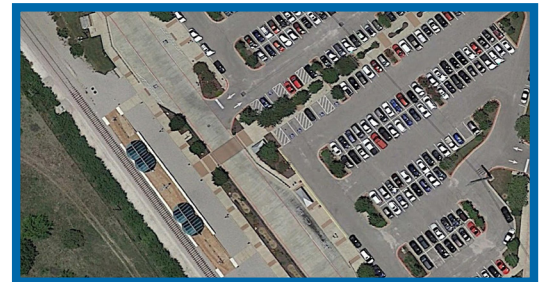
Howard Station

LAKELINE STATION is the northernmost station in the Austin city limits and functions as an important nexus for future TOD in the area that has been planned both east and west of the station. Traditionally a high-growth area, it is regionally accessible by transit, auto, and bicycle. As the facility is at peak occupancy, parking at the station is being expanded to include an additional 500 spaces, with 350 in the first phase.

Lakeline Station

LEANDER STATION is the northernmost station located in burgeoning Leander, Texas. The city adopted a Smart Growth Plan to encourage denser, walkable development with easy access to MetroRail, and Capital Metro has responded in cooperation with Leander Transit Development LLC, by using Torti Gallas Partners to design a TOD and develop a form based code and regulating plan for the development. ACC Leander Campus is adjacent to the station and will open Phase 1 of the campus in 2017.

Leander Station

CAPITAL METRO: NEW PLANS

Capital Metro is developing a Strategic TOD Tool that will be a diagnostic tool for integrating land use and transit. It will assess the readiness and suitability for TOD patterns around transit stations; assess the presence and quality of infrastructure to support TOD; and inform the conversation about TOD and land use policy, transit planning, and financing opportunities. The tool will first focus on the MetroRapid stations and is projected for implementation in 2016.

SUMMARY OF TOD MAIN THEMES

mix

A diverse mix of residential and non-residential land uses reduces the need to travel and ensures activation of public spaces at all hours.

▶ Encourage diversity through a variety of built forms.

▶ Reserve at least 30 per cent of residential floor area for affordable units.

▶ Provide a horizontal and vertical mix of uses.

RESIDENTIAL
INSTITUTIONAL
AFFORDABLE RESIDENTIAL
LIGHT INDUSTRIAL
MIXED RESIDENTIAL/OFFICE
COMMERCIAL

compact

Redevelopment of existing urban fabric helps ensure that residents can live close to jobs, schools, services and other destinations, resulting in reduced travel times and emissions.

▶ Centre new developments around high capacity rapid transit.

▶ Maintain commute times to employment centres at 20 min or less by public transport.

shift

Adequate parking fees and a reduction in the overall supply of parking create incentives for the use of public transport, walking, and cycling.

▶ Replace minimum off-street parking requirements with parking maximums.

▶ Reduce the space used for motor vehicle traffic and parking to no more than 12 per cent of the total land area.

▶ Price on-street parking to manage demand.

densify

▶ Create the highest densities within a 5 minute walk (400 m) of high capacity rapid transit stations.

Intensification of residential and commercial uses around high capacity rapid transit stations helps ensure that all residents and workers have access to high quality public transport.

▶ Plan developments with a plot-level density of at least 140 dwelling units per hectare.

source: Institute for Transportation and Development Policy

connect

A dense network of walking and cycling routes results in short, varied, and direct connections that improve access to goods, services, and public transport.

► Break up large blocks by creating publicly accessible pedestrian- and cycle-only paths.

≤ 1 ha

≤ 150 m

RAPID TRANSIT CORRIDOR

CYCLE SHARING STATION

PEDESTRIAN SPACE

► Reduce the size of city blocks (consisting of one or more plots) to 1 hectare or less, with the longest dimension no more than 150 m.

public transport

Frequent, fast, and reliable high capacity rapid transit reduces dependence on personal motor vehicles.

► Create a dense network of rapid transit lines to ensure that the majority of the population has access to high quality public transport.

walk

High quality, unobstructed pedestrian footpaths provide basic mobility for all. Furniture, landscaping elements, and active building edges transform walkways into vibrant public spaces.

► Provide street trees and covered walkways to make walking pleasant even during hot months. Ensure that lighting is present to increase safety at night.

► Leave at least 2 m of clear space to ensure that footpaths are accessible to all.

► Encourage active and visually permeable frontage—rather than blank compound walls—to improve safety.

► Use speed table crossings to reduce motor vehicle speeds.

cycle

Street design ensures safety for cyclists by reducing carriageway speeds or creating separate cycle tracks. A complete network, adequate shading elements, smooth surfaces, and secure cycle parking are essential.

► Create continuous, physically segregated cycle tracks when motor vehicle speeds are higher than 30 km/h.

source: Institute for Transportation and Development Policy

RESOURCES FOR FURTHER READING

TOD in Austin: www.austintexas.gov/department/transit-oriented-development

Capital Metro: www.capmetro.org/tod

Specific Regulating Districts: www.austintexas.gov/department/specific-area-regulations

Smart Growth America: www.smartgrowthamerica.org

Reconnecting America: www.reconnectingamerica.org

Institute for Transportation & Development Policy: www.itdp.org/library/standards-and-guides/transit-oriented-development-are-you-on-the-map/what-is-tod

Center for Transit-Oriented Development: www.ctod.org

National Association of City Transportation Officials: www.nacto.org

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MAPS OF EXISTING & PROPOSED SERVICE

METRORAPID STATION MAP

TECH RIDGE STATION / PARK & RIDE

DOMAIN STATION

UT WEST MALL STATION

TRIANGLE STATION

LAMAR SQUARE STATION

SOCO STATION

MetroRapid Station

MetroRapid 801 & 803

MetroRail Station

MetroRail Red Line

MetroRapid Park & Ride

METRORAIL STATION MAP

LAKELINE STATION

LEANDER STATION

HOWARD STATION

KRAMER STATION

CRESTVIEW STATION

HIGHLAND STATION

MLK, JR. STATION

DOWNTOWN STATION

PLAZA SALTILLO STATION

Legend:

○ MetroRail Station

— MetroRail Red Line

○ MetroRapid Station

• • • MetroRapid 801 & 803

Ⓟ MetroRapid Park & Ride

Map labels (stations and streets):

LEANDER, LAKELINE, HOWARD, KRAMER, CRESTVIEW, HIGHLAND, MLK, JR., PLAZA SALTILLO, DOWNTOWN

DOMAIN, BRAKER LN, UT RESEARCH CAMPUS, CROSSROADS, OHLEN, NORTHCROSS, JUSTIN, ALLANDALE, NORTH LOOP, SUNSHINE, ROSEDALE, WEST 38TH, 38TH, UT/DEAN KEETON, UT/WEST MALL, ML KING BL, MUSEUM, CAPITOL, AUSTIN HISTORY CENTER, 11TH, REPUBLIC SQUARE, SEAHOLM, LAMAR SQUARE, OLTORF WEST, BLUEBONNET, BRODIE OAKS, WESTGATE, ST EDWARD'S, SOUTH CONGRESS TRANSIT CENTER, LITTLE TEXAS, PLEASANT HILL, SOUTHPARK MEADOWS

TECH RIDGE, CHINATOWN, MASTERSON, RUNDBERG, NORTH LAMAR TRANSIT CENTER, BRENTWOOD, TRIANGLE, HYDE PARK, SOCO, OLTORF

SCHEMATIC MAP NOT TO SCALE

N

PROJECT CONNECT SYSTEM MAP

GEORGETOWN

LEANDER

HUTTO

CEDAR PARK

ROUND ROCK

PFLUGERVILLE

AUSTIN

MANOR

WEBBERVILLE

schematic map
not to scale

NORTH

CENTRAL TEXAS HIGH-CAPACITY TRANSIT SYSTEM PLAN
adopted June 2012 / revised June 2014 / DRAFT

Corridors, stations, routes and transit modes for planned lines are
conceptual only, and subject to review and modification.

Commuter Rail
MetroRail (operating)
Extension (proposed)

Bus Rapid Transit
MetroRapid (operating)
Extensions (proposed)

Regional Rail
LSTAR (proposed)

Transit in Express Lanes
MetroExpress (proposed)

Connect
MetroConnect
Direct, limited-stop
bus service (proposed)

Local Bus
MetroBus (operating)

Right-of-Way Preservation
Potential Future Transportation
Corridors

Express Lanes
(planned)
Potential Future Extensions

Major Transfer Center   Rail or BRT Station   Planned Transit Destination   Park & Ride

IMAGINE AUSTIN SYSTEM MAP

IMAGINEAUSTIN
Vibrant. Livable. Connected.

Transit Networks

Transit
○ High Capacity Transit Stop
◌ Proposed High Capacity Transit Stop
— Existing Red Line
— Commuter Rail
— Potential Future Connection
— Regional Rail
— High Capacity Bus (BRT)

Roadways
— Highway
— Other Streets

Boundaries
City Limits
ETJ
— County Boundaries

Centers / Key Pedestrian and Cyclist Areas
● Regional Center
● Town Center
● Neighborhood Center
● Job Center
Activity Corridor
● Activity Centers for Revelopment in Sensitive Environmental Areas

The future transit network includes the existing Capital MetroRail Red Line, regional rail, commuter rail, potential future connections, and bus rapid transit. Local bus routes are an essential element of the transit network; however, due to route changes and for the sake of a more understandable map, local bus service is not illustrated on this map.

* Map edited by Capital Metro to reflect updated transit system plans
   Revised January 04, 2016

CAMPO 2040 SYSTEM MAP

Map 15: 2040 Transit Projects with Centers

BELL

BURNET

MILAM

LLANO

WILLIAMSON

TRAVIS

LEE

BLANCO

BASTROP

HAYS

CALDWELL

FAYETTE

COMAL

COMAL

GUADALUPE

GONZALES

LAVACA

0 2.5 5   10   15   20
                                    Mi

This map was developed by CAMPO for the purpose of aiding in regional transportation planning decisions and is not warranted for any other use. CAMPO makes no guarantee regarding its accuracy or completeness. If you would like to receive the GIS layers found on this map send your request to campo@campotexas.org
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Author: GSG
Document Path: R:\Maps\2040 Plan Maps\Public Review Maps\Transit Projects 2040 with Centers_09182015.mxd

Legend

— Commuter Rail
— Rapid Bus
— Future Concept
● Transit Center/Park & Ride
— Intercity Rail
▨ 2040 Plan Centers
— Express Bus
▨ CMTA Service Area

CAMPO

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